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ABSTRACT

This digest explores media options as they relate to instructional design for distance education, because the function and design of each medium needs to be understood, if it is to lead to learning. It also describes other types of delivery media used in the history of distance learning before online learning programs: print, radio and telephone, audiotapes, and television. This digest examines how the computer has changed traditional offerings of distance education. The process of selecting appropriate media for learning at a distance and the emerging trend of the hybrid approach to teaching and learning at a distance and discusses common designs of hybrid courses are also described. The digest concludes with special considerations for distance learning: (1) determine your primary delivery approach (online or hybrid); (2) review the course outline to determine where media can be used to facilitate learning; (3) ascertain availability of student access to the media selected; and (4) locate appropriate resources to fit your objectives or plan to create them. Finally, a short list of Web resources on distance learning media is presented. (AEF)

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By. Donald P. Ely

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Selecting Media for Distance Education

By Donald P. Ely

Distance education is defined as "institution-based, formal education where the learning group is separate, and where interactive telecommunications systems are used to connect learners, resources, and instructors" (Schlosser and Simonson, 2002). This widely-used definition does not specify which media, if any, are commonly used for learning at a distance. The term *interactive telecommunications systems* implies that instructors and learners use a variety of technological resources when teaching and learning at a distance. This ERIC Digest will explore media options as they relate to instructional design for distance education, since the function and design of each medium needs to be understood if it is to lead to learning.

Online Learning Is Only One Type of Distance Learning

Distance education is often called *online learning* because Internet-connected computers are the primary delivery vehicles that bring together teacher and learner. This connection implies the replacement of face-to-face instruction that has existed since the beginning of time. It is understandable then that distance education often mimics face-to-face learning. The availability of contemporary technological tools creates opportunities for teachers to engage learners without directly facing them and, at the same time, to enhance the process.

Print

One of the major distinctions in the history of distance learning has been its medium of delivery. Some of the early programs were delivered primarily in print and are often referred to as *correspondence courses*. Correspondence study was conducted largely through the mail. The instructional media were books and other printed materials. The papers that passed from teacher to learner and vice versa provided the interaction. Today, the most common medium for learning at a distance is still paper—books, study guides, and bibliographies—while it may not be as glamorous as some of the colorful computer-based graphic resources.

Radio and Telephone

Another "old-timer" is radio. There are many examples of using radio for teaching and learning. Radio is a synchronous medium; that is, all learners have to be listening at the same time even though they are in different locations. Later, radio learning was enhanced by telephone conference calls during or after the initial audio presentation. Instruction by both telephone and radio usually incorporated printed materials as part of the delivery system.

Audiotapes and Television

Still later, disc recordings and recorded tapes offered an extension of radio and telephone communication. With the advent of audiotape, radio programs could be recorded and sent to learners, who could then choose the time and place to listen and respond to the materials presented in the audiotapes. When broadcast television became available, complete courses were offered (often at early morning hours) with supplemental materials, such as printed texts and audiotapes.

Each new delivery vehicle often absorbed support media from previous systems. Each communication vehicle was the framework that permitted interaction between teacher and student, thus validating each approach as a delivery system. These approaches retained the feeling and experience of most traditional face-to-face classes. Other variations, such as complete courses on audiotape or videotape, followed and incorporated some of the earlier media and interactive procedures between distance teachers and learners. Closed circuit television offered still another approach. Lessons were offered simultaneously to students in remote locations, such as a university campus or individual school buildings in a school system.

Computer-based

Current distance learning programs are increasingly relying on computer technologies but still use traditional media as resources for effective learning. These media are relatively inexpensive and can reach many individuals who prefer to study whenever and wherever they wish. The downside of one-way media use, with the exception of the telephone, is that interaction is limited and feedback is often delayed because of slow postal systems that deliver both study materials and responses to learner papers. Nevertheless, these media are often part of the delivery system package even as computer-based distance education continues to grow.

Traditional Versus Distance Education

The computer has changed the traditional offerings of distance education. The term, *online learning*, creates a new orientation for teachers and learners. It retains many of the characteristics of earlier forms of distance learning while offering more sophisticated media resources as integral components of the learning process. Even though many of the resources are the same in content, they have become an essential part of computer-delivered programs. It is possible to provide charts, graphs, maps, slides, moving images, and audio recordings with the study guide that helps to organize and deliver an entire course. It is the interaction between instructor and student in distance settings that requires communication on a person-to-person basis. This interaction uses e-mail, telephone conference calls and "chat" functions in computer programs to substitute for the face-to-face experiences of earlier times. The original distance education by correspondence has been upgraded by Twenty-first Century technology.

The primary question stemming from these new developments is: "Do students learn as well at a distance using contemporary technologies as they do when attending a face-to-face class?" Many studies regarding this question have been conducted and most research findings show that there is no significant difference

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between learning at a distance and face-to-face classroom learning. This finding applies to all age groups in almost every setting (Simonson, Smaldino, Albright and Zvacek, 2003; Gunawardena and McIsaac, 2003). If these findings are true, even most of the time, what are the implications for selecting media for teaching at a distance?

Selection of Appropriate Media

The process of selecting media for learning at a distance is, in most cases, the same (or nearly the same) as media selected for face-to-face teaching and learning. Delivery of media online offers easy access for students who are located at home, in a place of work or using computer access points in schools and libraries. Selecting media for distance education begins with consideration of course (or unit) objectives as a starting point. If learning can be facilitated by seeing, hearing or using manipulative media, which medium or media should be used to achieve the objectives and how will it be delivered? Can it be integrated with an online course management system (such as Blackboard, click2learn or WebCT) or should it be separate for use in conjunction with printed handouts and online guidance? Some distance courses provide kits of media that are used off-line. Examples are science laboratory kits, audio lectures, and packets of manipulative materials.

Each medium should pass certain tests before incorporating it into the distance learning scheme. Will the learner have access to the medium at home, work or in a community setting? Does the access include the necessary software? Can the cost of the material be justified, that is, is it cost effective for the instructor to produce and for the students to acquire? Is the resource essential or just "nice to have"? Again, think about cost to the student and the extent to which it will enhance achievement of the learning objectives. Is there an alternative medium that could achieve the same objective? (For example, sometimes printed materials instead of audiovisual media will suffice.) Will it be delivered as an integral part of a course management system or as a separate item? (For example, do students have separate means to use CD-ROM, floppy disc, videotape, audiotape, slides or manipulative materials?) Will interaction be handled by e-mail, online discussion groups, telephone (individual or conference calls), infrequent face-to-face meetings, or postal correspondence?

One emerging trend is the *hybrid* approach to teaching and learning at a distance. There are many opportunities for creating hybrid distance education. One of the most common designs is online with both face-to-face and telephone conference calls within a single course. Hybrid courses do not change the decisions about media to be used, but they do require new instructional designs. Hybrid distance education usually facilitates interactivity among students and between the instructor and students. One example is a hybrid course that is offered primarily online, with students meeting face-to-face at the beginning of the course (or at mid-point) and the instructor initiating a conference call with groups every other week. This approach helps to replicate the social element of traditional courses and student conversations before and after classes and in the coffee shop. When the social factor is included using some of these techniques, there are fewer concerns about student isolation, which can otherwise be a fairly frequent complaint of distance education courses.

Conclusion

Special considerations for distance learning are as follows: (1) determine your primary delivery approach (online or hybrid); (2) review the course outline to determine where media can be used to facilitate learning; (3) ascertain availability of student access to the media selected; and (4) locate appropriate resources to fit your objectives or plan to create them.

Be sure to consider alternative media that may be less expensive, yet potentially as effective as more expensive media. For example, print, audio and video recordings, and the telephone should be considered in the selection process. The challenge is to select and provide appropriate media that will accomplish learning objectives in the most cost-effective manner. Remember, there are often less expensive alternatives that will accomplish the same objectives.

Web Resources

--A useful Media Selection Worksheet can offer a beginning for planning media use. Here is one: www.mcli.dist.maricopa.edu/authoring/handbooks/cs-media.html

--Media selection procedures are offered at http://ide.de.psu.edu/ide. Select *Browse Strategies* and determine which processes best suit your needs.

--An excellent overview of telecommunications media for distance learning is available at: www.ed.gov/databases/ERIC_Digests/ed358841.html

--*An Emerging Set of Guiding Principles and Practices for the Design and Development of Distance Education* contains a comprehensive overview of distance learning design. Page 7 lists principles for instructional media and tools. Visit www.worldcampus.psu.edu/ide/docs/guiding_principles.pdf

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